

VOICE BASED EMAIL SYSTEM FOR BLINDS

KUSHAGRA BANSAL¹, SACHIN GARG (ASSISTANT PROFESSOR)

Maharaja Agrasen Institute of Technology

Abstract - DEVELOPING EMAILING PLATFORM FOR VISUALLY IMPAIRED PEOPLE THAT HELPS PEOPLE SEND EMAIL'S WITHOUT RELYING ON ANYONE AND COMMUNICATE FORMALLY OR INFORMALLY FREELY, SECURELY AND EFFECTIVELY WITHOUT ANY BARRIER. THE PROPOSED SYSTEM IS AN EMAILING SYSTEM MADE WITH LATEST AND CUTTING-EDGE TECHNOLOGIES BASED ON ARTIFICIAL INTELLIGENCE LIKE SPEECH RECOGNITION, PYAUDIO USING PYTHON AS THE CODING LANGUAGE

Key Words: VISUALLY IMPAIRED, EMAIL, EMAIL ASSIST, SPEECH TO TEXT.

1. INTRODUCTION

IN TODAY'S FAST-MOVING WORLD, ONE OF THE BASIC FACILITIES ALSO WE CAN SAY A BOON AS WELL AS THE INTERNET, IT HAS CHANGED THE WAY PEOPLE INTERACT, COMMUNICATE WITH EACH OTHER, A LOT OF NEW PLATFORMS LIKE WHATSAPP, FACEBOOK, INSTAGRAM, TWITTER ETC. ARE AVAILABLE IN THE MARKET. PEOPLE ARE BECOMING MORE AND MORE RELIABLE ON THESE PLATFORMS ONE OF THE MAIN REASONS BEHIND THEIR POPULARITY IS THAT THERE IS NO LIMITATION OF ANY KIND FOR ANY KIND OF PEOPLE LIKE NORMAL PEOPLE, PHYSICALLY OR VISUALLY IMPAIRED PEOPLE EVEN ILLITERATE PEOPLE CAN COMMUNICATE WITH EACH OTHER USING THESE PLATFORMS. ONE OF THE MAIN FEATURES THAT HELP THEM COMMUNICATE IS VOICE MESSAGING OR VOICE TEXTING. APART FROM THE DIFFERENT PLATFORMS, THERE IS ANOTHER PLATFORM THAT IS THE CONVENTIONAL EMAILING SYSTEM. WHICH IS ONE OF THE MOST COMMONLY USED PLATFORMS WHEN IT COMES TO FORMAL MESSAGING. BUT IT LACKS THE COMMON FEATURE THAT IS AVAILABLE IN TODAY'S

ADVANCED PLATFORMS THAT ARE LIKE OF WHATSAPP, FACEBOOK ETC. EMAIL HAS TO BE TYPED WHICH IS VERY EASY FOR A NORMAL PERSON BUT WHEN IT COMES TO PEOPLE WITH DIFFERENT DISABILITIES IT BECOMES HECTIC FOR THEM, THEY EITHER HAVE TO FIND SOMEONE WHO CAN TYPE ON THEIR BEHALF OR THEY ARE NOT ABLE TO COMMUNICATE USING EMAILING. TO OVERCOME THIS PROBLEM, THE SOLUTION IS THAT IF WE CAN MAKE A PLATFORM FOR EMAILING USING VOICE COMMANDS WITHOUT USING THE KEYBOARD AND WITH THE HELP OF MOUSE CLICKS.

THE PROBLEM CAN BE SOLVED AND DISABLED PEOPLE WOULD NOT HAVE TO DEPEND ON ANYONE AND CAN DO THEIR WORK EASILY AND SECURELY ON THEIR OWN.

2. SCOPE OF PROJECT

COMMUNICATION PLAYS A VITAL ROLE IN TODAY'S WORLD BOTH FORMAL AND INFORMAL BUT CAN IT BE DONE BY ANY PERSON EASILY AND SECURELY CERTAINLY NOT. TAKE AN EXAMPLE OF EMAILING SYSTEM PEOPLE WHO CAN SEE EASILY TYPE EMAIL IN MINUTES BUT PEOPLE WHO ARE NOT ABLE TO SEE CAN'T TYPE EMAIL'S EASILY EITHER THEY HAVE TO REMEMBER THE KEYS OR THEY HAVE TO TAKE SOMEBODY'S HELP IN THAT SCENARIO THEIR MAIL ACCOUNT AND THEIR OTHER PERSONAL DETAILS WILL NEVER BE SECURED. TO OVERCOME SUCH A PROBLEM THE PROPOSED SYSTEM WILL COME IN HANDY AS IT DOES ITS JOB RIGHT AND IS USER-FRIENDLY GIVES COMMANDS ON EVERY STEP AND REPEATS WHAT YOU HAVE CHOSEN OR WHAT YOU HAVE TO SPEAK. SO, THE PROJECT HAS A VERY GOOD SCOPE IN THE NEAR FUTURE AND HELPS VISUALLY CHALLENGED PEOPLE IN COMMUNICATING SECURELY AND PRIVATELY.

3. AIM OF THE PROJECT

THE MAIN IDEA FOR MAKING THE PROJECT IS TO MAKE VISUALLY CHALLENGED PEOPLE SELF-RELIANT AND TO DO SOME CONTRIBUTION TOWARDS THE BETTERMENT OF SOCIETY. THE SYSTEM IS LIKE A IVR SYSTEM THAT GIVES INSTRUCTIONS ON WHAT ONE HAS TO DO LIKE IT SAYS TO ENTER EMAIL ID AND PASSWORD UPON SUCCESSFUL LOGIN IT GIVE DIFFERENT OPTION AS COMPOSE READ, TRASH, LOGOUT ETC. MAKING THE CONVENTIONAL EMAILING SYSTEM EASIER FOR THE SPECIALLY-ABLED PEOPLE AS WELL AS SECURE.

4. EXISTING SYSTEM

IN THE PREVIOUSLY EXISTING SYSTEM THE VISUALLY IMPAIRED PEOPLE WERE NOT ABLE TO SEND EMAILS WITHOUT THE HELP OF EITHER SOMEONE OR THEY HAVE TO REMEMBER THE KEYS OF THE KEYBOARD. TO HELP BLIND PEOPLE BRAILLE KEYBOARD IS ALSO AVAILABLE BUT IT IS COSTLY AND SOME PEOPLE MIGHT NOT BE ABLE TO AFFORD IT. A SCREEN READER MIGHT ALSO NOT COME IN HANDY FOR SOME PEOPLE AS VISUAL MIGHT NOT BE ABLE TO SURVEY THE WHOLE SCREEN.

5. PROPOSED SYSTEM

THE PROPOSED SYSTEM ERADICATES THE PROBLEMS THAT ARE IN CONVENTIONAL OR EXISTING SYSTEMS. IN THE SYSTEM PEOPLE WOULD BE ABLE TO EASILY AVAIL THEMSELVES THE MAILING FUNCTIONALITY WITH THE HELP OF INSTRUCTIONS AS PROVIDED BY THE SYSTEM AND WOULD BE GUIDED AT EVERY STEP WHICH HELPS VISUALLY IMPAIRED PEOPLE TO SEND, READ, DELETE MAILS WITHOUT ANYBODY'S HELP AND THEIR MAIL ID AND PASSWORD WOULD BE SECURE WHICH IN-TURN HELP THEM TO BE FREE FROM INVOLVING IN DANGEROUS OR SUSPICIOUS ACTIVITIES. THEY WOULD NOT REQUIRE ANYBODY'S HELP AND BECOME SELF-SUFFICIENT AND SELF-RELIANT.

6. REQUIREMENTS

A. HARDWARE REQUIREMENTS*:

> PROCESSOR: INTEL COREI3/PENTIUM OR ANY ADVANCED VERSION

> RAM: 4 GB(MIN)

> SPEAKERS

> EARPHONE/HEADPHONES

B. SOFTWARE REQUIREMENTS*:

> OPERATING SYSTEM: ANY VERSION OF WINDOWS NT FAMILY (4.0 & ABOVE)

> LANGUAGE: PYTHON

> FRAMEWORK: DJANGO

C. PYTHON LIBRARIES*:

> SPEECH RECOGNITION, GTTS, PYAUDIO, PLAYSOUND, SMTPLIB, IMAPLIB, EMAIL.

7. MODULE DESCRIPTION

A. SPEECH RECOGNITION: THE MICROPHONE OF THE HEADPHONE / EARPHONE IS USED TO GIVE THE VOICE INFORMATION THAT HAS BEEN ASKED BY THE SYSTEM LIKE EMAIL ID, PASSWORD, MESSAGE TO BE SENT ETC. THE VOICE PASSED THROUGH THE MICROPHONE IS PROCESSED BY THE PYTHON'S SPEECH_RECOGNITION MODULE AND GOOGLE-TEXT-TO-SPEECH MODULE SUPPORTS THE VOICE RECOGNITION FUNCTION.

B. PYAUDIO: PYAUDIO IS A LIBRARY USED FOR THE INPUT AND OUTPUT OF AUDIO. PYAUDIO IS ALSO USED FOR RECORDING AND PLAYING THE AUDIO. THE USE OF THIS MODULE IN THE SYSTEM IS THAT THE SYSTEM REPEATS THE COMMANDS THAT ARE GIVEN BY THE USER SO AS TO CONFIRM THAT THE COMMAND OR MESSAGE IS CORRECT OR NOT.

C. SMTPLIB: SMTP STANDS FOR 'SIMPLE MAIL TRANSFER PROTOCOL'. SMTPLIB IS A PYTHON LIBRARY FOR SENDING EMAILS. IT IS ONE OF THE MAIN LIBRARIES FOR IMPLEMENTING THE FUNCTIONALITY OF THE SYSTEM.

D. IMAPLIB: IMAP STANDS FOR 'INTERNET MAIL ACCESS PROTOCOL'. IT IS A CLIENT-SIDE LIBRARY FOR ACCESSING EMAILS USING IMAP PROTOCOL.

E. EMAIL: THE EMAIL PACKAGE USED IN THE SYSTEM IS USED FOR MANAGING EMAIL MESSAGES. ITS NOT DESIGNED TO SEND MESSAGES USING SMTP PROTOCOL. ITS JUST A SUPPORTING LIBRARY.

[4] Arjun AJ, "Voice based email for blinds", Slide Share <http://www.slideshare.net/123Arjun1/voice-based-email-for-blinds>

8. CONCLUSION

THIS VOICE BASED EMAILING SYSTEM CAN BE USED BY ANYONE OF ANY AGE ITS LIKE A IVR SYSTEM INSTRUCTION ARE PROVIDED BY THE SYSTEM AND THE USER DO AS PER AS THE INSTRUCTIONS. THE MAIN FEATURE IS THAT IT HAS BOTH SPEECH-TO-TEXT AND TEXT-TO-SPEECH AS WELL WHICH HELPS THE VISUALLY IMPAIRED OR BLIND PEOPLE TO AVAIL CONVENTIONAL MAILING SYSTEM FUNCTIONALITIES SECURELY AND WITHOUT ANY PAIN.

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